IN THE SPECIFICATION:

Please amend paragraph number **[0003]** as follows:

[0003] Essentially, stereolithography, as conventionally practiced, involves utilizing a computer to generate a three-dimensional (3-D) mathematical simulation or model of an object to be fabricated, such generation usually effected with 3-D ~~computer-aided~~ computer-aided design (CAD) software. The model or simulation is mathematically separated or "sliced" into a large number of relatively thin, parallel, usually vertically superimposed layers, each layer having defined boundaries and other features associated with the model (and thus the actual object to be fabricated) at the level of that layer within the exterior boundaries of the object. A complete assembly or stack of all of the layers defines the entire object and surface resolution of the object is, in part, dependent upon the thickness of the layers.

Please amend paragraph number **[0004]** as follows:

[0004] The mathematical simulation or model is then employed to generate an actual object by building the object, layer by superimposed layer. A wide variety of approaches to stereolithography by different companies has resulted in techniques for fabrication of objects from both metallic and nonmetallic materials. Regardless of the material employed to fabricate an object, stereolithographic techniques usually involve disposition of a layer of unconsolidated or unfixed material corresponding to each layer within the object boundaries. The layer of material is selectively consolidated or fixated to at least a semisolid state in those areas of a given layer corresponding to portions of the object, the consolidated or fixed material also at that time being substantially concurrently bonded to a lower layer. The unconsolidated material employed to build an object may be supplied in particulate or liquid form and the material itself may be consolidated, fixed or cured, or a separate binder material may be employed to bond material particles to one another and to those of a ~~previously formed~~ previously formed layer. In some instances, thin sheets of material may be superimposed to build an object, each sheet being fixed to a next lower sheet and unwanted portions of each sheet removed, a stack of such sheets

defining the completed object. When particulate materials are employed, resolution of object surfaces is highly dependent upon particle size. When a liquid is employed, resolution is highly dependent upon the minimum surface area of the liquid which can be fixed (cured) and the minimum thickness of a layer which can be generated, given the viscosity of the liquid and other parameters, such as transparency to radiation or particle bombardment (see below) used to effect at least a partial cure of the liquid to a structurally stable state. Of course, in either case, resolution and accuracy of object reproduction from the CAD file is also dependent upon the ability of the apparatus used to fix the material to precisely track the mathematical instructions indicating solid areas and boundaries for each layer of material. Toward that end, and depending upon the layer being fixed, various fixation approaches have been employed, including particle bombardment (electron beams), disposing a binder or other fixative (such as by ink-jet printing techniques), or irradiation using heat or specific wavelength ranges.

Please amend paragraph number **[0017]** as follows:

[0017] In a preferred embodiment, the layer and associated structures are fabricated on the substrate using precisely focused electromagnetic radiation in the form of an ultraviolet (UV) wavelength laser to fix or cure a liquid material in the form of a photopolymer. However, the invention is not so limited and other ~~stereolithographically applicable~~ stereolithographically applicable materials may be employed in the present invention.

Please amend paragraph number **[0051]** as follows:

[0051] Each sub-layer 51 of complete layer 50 is preferably built by first defining any internal and external object boundaries 58 of that sub-layer 51 with laser beam 28, then hatching solid areas of complete layer 50 with laser beam 28. If a particular part of a particular sub-layer 51 is to form a boundary 58 of a void in the object above or below that sub-layer 51, then the laser beam 28 is scanned in a series of ~~closely spaced,~~ closely spaced, parallel vectors so as to develop a continuous surface, or skin,

with improved strength and resolution. The time it takes to form each sub-layer 51 depends upon its geometry, surface tension and viscosity of material 16, and thickness of the layer.

Please amend paragraph number **[0058]** as follows:

[0058] The various types of layer coverage depicted in FIGS. 3-9 are exemplary only and not intended to be limiting. Any portion of any die 52 of any configuration may have a layer 50 formed thereon by this invention, using one material layer or two or more superimposed, contiguous, ~~mutually adhered~~ mutually adhered sub-layers 51.

Please amend paragraph number **[0061]** as follows:

[0061] Referring again to FIG. 1 of the drawings, improved performance of this process is achieved by certain additions to apparatus 10. As depicted, apparatus 10 includes a camera 70 which is in communication with computer 12 and preferably located, as shown, in close proximity to mirror 24 located above surface 54 of wafer 60 or another substrate on which a layer 50 according to the invention is to be formed. Camera 70 may be any one of a number of commercially available cameras, such as capacitative-coupled discharge (CCD) cameras available from a number of vendors. Suitable circuitry as required for adapting the output of camera 70 for use by computer 12 may be incorporated in a board 72 installed in computer 12, which is programmed as known in the art to respond to images generated by camera 70 and processed by board 72. Camera 70 and board 72 may together comprise a so-called "machine vision system," and specifically a "pattern recognition system" (PRS), operation of which will be described briefly below for a better understanding of the present invention. Alternatively, ~~a self-contained~~ self-contained machine vision system available from a commercial vendor of such equipment may be employed. For example, and without limitation, such systems are available from Cognex Corporation of Natick, Massachusetts. The apparatus of the exemplary Cognex BGA Inspection Package™ or SMD Placement Guidance Package™ may be adapted to the present invention, although it is believed that the MVS-8000™ product family and the

Checkpoint® product line, the latter employed in combination with Cognex PatMax™ software, may be especially suitable for use in the present invention.

Please amend paragraph number **[0066]** as follows:

[0066] It should be noted that the laser treatment may be carried out to form a boundary 58 which adheres to the surface (e.g., die surface 56) of the substrate and the sub-layer 51 within the boundary is lightly cured to form a ~~semi-solid~~ semisolid "skin" which encloses liquid material 16. Trapped, unconsolidated material will eventually cure due to the cross-linking initiated in the outwardly adjacent photopolymer. The cure of sub-layer 51 may be subsequently accelerated by broad-source UV radiation in a chamber, or by thermal cure in an oven. In this manner, an extremely thick protective layer 50 may be formed in minimal time within apparatus 10.

Please amend paragraph number **[0067]** as follows:

[0067] As illustrated in FIG. 10, the method of the invention may be adapted to form layers 50 on dice 52 (e.g., LOC dice) already mounted on lead frames 66. In the example of FIG. 10, a series of dice 52 have active surfaces 64 secured to lead frames 66 of lead frame strip 80 and electrically connected thereto, such as by wire bonds 68, thermocompression bonding, TAB bonding, or otherwise as known in the art. A layer 50 of ~~semi-solid~~ semisolid material formed from material 16 may be formed on any particular portion of the active surface 64 or back side 82 (including lead frame 66) of each die 52, for protection, insulation or other purpose. In the example of FIG. 10, a layer 50 of ~~semi-solid~~ semisolid material is to be formed on portions of the active surface 64 of a die 52 suspended from lead frame strip 80 and supported on platform 20. Layer 50 surrounds lead fingers of the lead frame 66 and provides attachment thereof to die 52. As already described, a film of liquid material 16 is formed atop the active surface 64 and lead frame 66. A narrow beam 28 of UV laser radiation is precisely scanned by stereolithographic means over particular areas to partially cure the material 16 to form a ~~semi-solid~~ semisolid layer 50. The lead frame strip 80 is then repositioned to place the

next sequential die 52 in place for formation of layer 50. It should be noted that the process may be conducted without an underlying platform 20 provided that the die 52 and lead frame strip 80 are securely joined and a vertical position of the combination may be precisely attained and retained without underlying support.

Please amend paragraph number **[0068]** as follows:

[0068] In another variation, shown in the example of FIG. 11, a narrow sub-layer 51 defining an attachment 84 of ~~semi-solid~~ semisolid material may be first formed with the dice 52 positioned atop the lead frame strip 80, this layer formed adjacent the periphery of the dice 52 to join outer portions of the lead fingers to the dice. Attachment 84 may be formed by submerging the lead frame strip and die to a level providing the desired reinforcement member and partially curing by laser radiation. Following this step, the lead frame strip 80 may then be inverted and a layer 50 (not shown) applied to the active surface 64 of lead frame 66 side of the die 52, electrically connected thereto, such as by wire bonds 66, as indicated above.

Please amend paragraph number **[0072]** as follows:

[0072] Referring to FIGS. 1 through 10 of the drawings, it will be apparent to the reader that the present invention involves a substantial departure from prior applications of stereolithography, in that the structures of preformed electrical components are modified by forming layered structures thereon using ~~computer-controlled~~ computer-controlled stereolithography.